Service Date: May 18, 1984

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

* * * * *

IN THE MATTER of the Application of	)	UTILITY DIVISION
MONTANA-DAKOTA UTILITIES, INC.	)	
for Authority to Establish Permanent	)	DOCKET NO. 83.8.58
Increased Rates for Gas Service in the	)	
State of Montana.	)	ORDER NO. 5020b

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APPEARANCES

FOR THE APPLICANT:

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John C. Allen, Consumer Counsel Staff Attorney, 34 West Sixth Avenue, Helena, Montana 59620, appearing on behalf of the consuming public of the State of Montana

FOR THE INTERVENORS:

C. W. Leaphart, Jr., Attorney at Law, The Leaphart Law Firm, 1 North Last Chance Gulch, #6, Helena, Montana 59601, appearing on behalf of Great Western Sugar Company

FOR THE COMMISSION:

Robert Nelson, Staff Attorney

BEFORE:

DOCKET NO. 83.8.58, ORDER NO. 5020b

THOMAS J. SCHNEIDER, Chairman
HOWARD L. ELLIS, Commissioner
DANNY OBERG, Commissioner

FINDINGS OF FACT

PART A

GENERAL

1. On August 24, 1983, the Montana-Dakota Utilities Company (MDU, the Company or Applicant) filed an application with the Commission seeking a general rate increase for gas service. MDU requested an annual increase in revenues in the amount of $7,917,936.

2. Included in the August 24th filing was a request for interim relief in the amount of $6,515,469. On October 3, 1983, the Commission granted an interim increase of $4,830,862 in Order No. 5020.

3. On September 16, 1983, the Commission published notice of the application and a proposed procedural schedule. Detailed Proposed Procedural Orders were individually served on parties to the last MDU rate case and the service list submitted with the application. After considering requested amendments, the Commission issued a final Procedural Order on October 5, 1983.

4. Upon petition, intervenor status was granted to the Montana Consumer Counsel (MCC), Pierce Packing Company, and Great Western Sugar .

5. On October 17, 1983, the Commission granted MCC's unopposed motion to consolidate the proceedings in this Docket with those in PSC Docket No. 82.6.40, Phase II, making both Dockets subject to the same Procedural Order.

6. Also on October 17, 1983, the Commission ordered consideration of MDU's request for a "Special Residual Fuel-Oil Based Industrial Gas Service Rate 90" (Rate 90) to be merged with this Docket. On December 22, 1983, the Commission ordered interim implementation of Rate 90 for a 90 day period.

7. Following issuance of notice, the hearing on MDU's application in this Docket commenced at 9:00 a.m. on January 24, 1984, concluding on January 27, 1984, at the Miles

Community College, Room 106, Miles City, Montana. Public hearings for the convenience of the public were also held at 7:00 p.m., January 24, 1983 at the same location, as well as at the following times and places:

> Billings: January 25, 1984, 7:30 p . m., courtroom of the U. S. Courthouse, Federal Building, 316 North 26th Street;

Glendive: February 7, 1984, 10:00 a.m. in the Community Room of the Dawson County Courthouse;

Sidney: February 7, 1984, 7:00 p . m . in the basement of the Sidney Public Library;

Wolf Point: February 9, 1984, 7:30 p . m. in the courtroom of the Roosevelt County Courthouse; and

Glasgow: February 10, 1984, 10:00 a.m. in the courtroom of the Valley County Courthouse.

PART B

RATE OF RETURN

Capital Structure

8. Applicant's witness, Mr. John Renner, in his original testimony presented a utility capital structure as anticipated at September 30, 1983. During the hearing, Mr. Renner presented the actual September 30, 1983, utility capital structure.

9. Applicant proposed the following capital structure and associated costs (TR, p . 100):

Description	Ratio	Cost	Weighted Cost
Long-Term Debt	46.801%	9.030%	4.136%
Preferred Stock	14.995	8.793	1.319
Common Equity	39.204	15.500	6.077
Total	100.000%		11.532%

10. Dr. Caroline Smith, expert witness for the Montana Consumer Counsel, in her testimony proposed an allocated gas utility capital structure as of September 30, 1983. Dr. Smith adjusted her capital structure to eliminate nonutility and electric operations.

11. MCC proposed the following capital structure and associated costs (MCC Exh. 1, Exh. CMS-1):

Description	Ratio	Cost	Weighted Cost
Long-Term Debt	40.91%	9.03%	3.69%
Preferred Stock	16.35	8.79	1.44
Common Equity	42.74	13.00	5.56
Total	100.00%		10.69%

Allocation Factors and Procedures

12. In Order No. 4834c of Docket No. 81.7.62, because some confusion had existed surrounding the proper approach to be used in determining MDU's capital structure amounts for the gas and electric utilities, the Commission provided an explanation of the proper allocation procedure:

> Starting with the consolidated MDU company's common equity, investment in all nonutility subsidiaries is deducted, which leaves utility common equity. The ratio of gross gas utility plant plus gas construction work in progress to total gross utility plant plus total utility construction work in progress is then applied to total utility common equity to determine the portion attributable to the gas utility. The same ratio is applied to total utility preferred stock. The ratio is also applied to utility debt, but only after REA mortgage notes and pollution control debt are allocated directly to the electric utility. The same procedure should be used in computing the electric utility capital structure. (Order No. 4834c, Finding of Fact No. 55)

13. In this Docket, MDU and MCC have again used different allocation factors. Mr. Renner's allocation calculation was done with data for net plant, construction work in progress, and gas in storage. Dr. Smith's allocation factor was calculated from data for gross plant plus construction work in progress as of September 30, 1983. (MCC Exh . 3A of Docket No. 83.9.68, p. 8)

14. During cross-examination by Mr. Nelson of the Commission, Dr. Smith discussed the appropriateness of her proposed allocation factors:

> Q. I believe you were explaining the difference between your allocation and methodology and the Company's.

> A. Yes, the allocation factors I discussed in my electric testimony -- The allocation factors that we factor are done differently. Mine are gross plant plus CWIP as of September 30, which is the date of my capital structure. My Renner's allocation was done on the basis of net plant plus CWIP plus gas in storage. I don't have gas in storage in my calculation at all.
>
> It seems to me that when the Company sells securities, those are associated with facilities that are put on line which, in effect, go into the gross-plant account on the assets side of the balance sheet. That's what those securities are supporting, and that's the major component of the assets that are used and useful.
>
> There is an argument for using net instead of gross on the theory that depreciation is collected to replace -or displace previously sold securities and allow them to fund new assets. I think between gross and net plant, probably either one of those things could be done.
>
> I'm less comfortable with the use of gas in storage just because it's not real obvious to me that that's something that could be used to secure securities, but I suppose if you were to find out different from that, you might want to rethink Mr. Renner's proposal as opposed to the one that I followed.

15. Concerning the matter of whether to use gross plant plus CWIP or net plant plus CWIP in determining proper allocation factors between MDU's gas and electric capital structures, the Commission agrees with Dr. Smith that generally either formula could be appropriate. However, since the Commission has consistently approved the gross plant plus CWIP method, as proposed by MCC, the Commission believes that continuance of that approach would be proper to provide smooth flow from case to case while protecting against "slippage through the cracks."

16. Regarding the inclusion of gas in storage in the allocation formula, the Commission agrees with Dr. Smith that since gas in storage cannot be used to secure securities, gas in storage should not be included in the allocation formula. The Commission, therefore, finds the MCC proposed gas allocation factor of 44.82 percent to be proper in this proceeding.

17. In the current Docket, MDU chose not to adhere to the allocation procedure described above in Finding of Fact No. 12. Instead, the Company proposed a gas capital structure which would be identical to its electric capital structure. The total amount of long-term debt, thus, includes approximately $32 million of directly assignable electric utility debt (MDU Exh. B, St. F, p. 1 of 3).

18. MCC witness Dr. Smith proposed to allocate long-term debt in the manner supported by the Commission in the last MDU general gas case, Order No. 4918b of Docket No. 82.6.40. Dr. Smith first made direct assignments (for both nonutility equity capital and electric-identified long-term debt) and then allocated the remaining common utility debt between electric and gas operations based on the gas allocation factor of 44.82 percent (MCC Exh . 1, Exh. CMS-11, p. 1 of 2).

19. The Commission believes that directly assignable debt should be matched with the utility capital structure to which the proceeds can be traced. The remaining common utility debt should then be allocated between gas and electric according to the ratio described in Finding of Fact No. 12. The Commission, therefore, determines Dr. Smith's procedure for allocating long-term debt to be proper in this proceeding. The following table shows the proper computation of the approved amount of long-term debt in this proceeding in the amount of $64,701,000:

(000)

First Mortgage Bonds	$ 89,775
Sinking Fund Bonds	54,583
Total	$144,358*
Allocation Factor	.4482
Approved Long-Term Debt	$ 64,701

* Excludes $31,802,000 of pollution control and REA debt, which is directly assignable to electric utility.

20. Concerning the amount of preferred stock and common equity, the allocation factor of 44.82 percent must be applied to the total utility figures to determine the proper amounts in the capital structure. MDU and MCC agreed upon the proper amounts of unallocated preferred stock and common equity in MCC Exh. 1, Exh. CMS-1. The Commission, therefore, determines the proper

amount of allocated preferred stock in this proceeding to be $25,849,000 and the proper amount of allocated common equity to be $67,581,000, excluding MDU's equity investment id subsidiaries.

Cost of Capital

Preferred Stock

21. The cost of preferred stock is not a controverted issue in this case. The cost of preferred stock is based on the embedded cost of preferred shares outstanding at September 30, 1983, and has been determined to be 8.79 percent by the Applicant and MCC (TR, p. 100). This cost is acceptable to the Commission.

Long-Term Debt

22. Dr. Smith of MCC included one year's amortization of gain from reacquired debt as of September 30, 1983, as a deduction to interest expense. The Company also included amortization of the gain as a reduction of interest expense. Mr. Renner explained in his rebuttal testimony that the amortization of the gain on reacquired debt is being deducted from the cost of debt, thereby reducing the embedded debt cost and passing this gain on to the customer (MDU Exh. E, pp. 6-7). The Company disagreed with also giving the customer favored treatment as to the unamortized portion of the gain, as will be discussed in the rate base portion of this Order.

23. The Commission agrees with Dr. Smith and the Company that the amortization of the gain from reacquired debt should serve as a reduction to interest expense for long-term debt. This treatment allows customers to be compensated, as they paid the interest on the bonds while they were outstanding. As shown on Exh. B, Rule 38.5.147, page 1 of 3, the Company has offset long-term debt interest expense with amortization of the gain from reacquired debt. The Commission determines, therefore, that the amortization of gain from reacquired debt as an offset to debt expense is appropriate in this Docket.

24. Pursuant to the previous discussion of the proper amount of long-term debt in Finding of Fact Nos. 17 through 19, the Commission determines the proper cost of long-term debt to be 9.03 percent in this proceeding, as calculated below:

	Amount (000)		Annual Cost (000)
First Mortgage Bonds	$ 89,775		$ 7,785
Sinking Fund Bonds	54,583		5,251
Total Utility	$144,358		$13,036
Gas Allocation Factor	x .4482		x .4482
Total Gas Utility	$ 64,701		$ 5,843
Cost of Gas Long-Term Debt		9.03%	

* Includes amortization of gain from reacquired debt as a deduction to interest expense.

Common Equity

Applicant

25. Based on the testimonies of Mr. William Glynn and Dr. Dennis Fitzpatrick, Mr. John Renner proposed a cost of common equity of 15.5 percent. Dr. Fitzpatrick performed an updated study for his rebuttal testimony, and he found that since the time of his original study in early May of 1983, MDU's cost of equity capital had increased at least another 50 basis f points (MDU Exh. T, pp. 4-5). MDU thereafter, however, did not modify its application to seek a return on equity greater than 15.5 percent.

26. Dr. Fitzpatrick's determination of MDU's cost of common equity capital was based on three separate studies: (1) the equity-debt risk premia approach; (2) a descriptive study of the financial performance of MDU and comparable risk companies; and (3) the discounted cash flow (DCF) method (MDU Exh. H, p. 5). The result of each of these studies supported Dr. Fitzpatrick's original conclusion that MDU's cost of equity is not less than the 15-16 percent range, and supported his updated conclusion that MDU's cost of common equity capital is between 15.5 and 18 percent as of December, 1983 (MDU Exh. I, p . 5).

27. In his equity-debt risk premia approach, Dr. Fitzpatrick examined the return/risk relationship of MDU's common stock vis-a-vis alternative investment opportunities. One of the

major premises in this analysis is that the cost of common equity capital is never less than the cost of a utility's long-term debt (MDU Exh. H, p. 10). In his testimony, Fitzpatrick testified:

> The implications of this equity-debt risk premia analysis are clear. First, MDU's cost of common equity is currently not less than 11.75%. Second, a very conservative estimate of MDU's equity risk premium is from 3 to 4%.... Given the incremental cost of MDU's long-term debt in early 1983 and my estimate of MDU's minimum equity risk premium, the equity-debt risk premia approach indicates that MDU's cost of common equity is between 14.75% and 15.75%...
> (MDU Exh. H, p. 17)

Comparatively,- in his rebuttal testimony, Dr. Fitzpatrick determined that the equity-debt risk premia approach indicated that MDU's updated cost of common equity capital is not less than 16.5%. (MDU Exh. I, p. 4)

28. In his comparison of comparable risk companies, Dr. Fitzpatrick first analyzed MDU's overall financial performance since 1971 and then compared that data to the five sets of companies that he felt have exhibited business and financial risk characteristics generally similar to the risk associated with MDU's gas utility operations. Dr. Fitzpatrick estimated the average cost of common equity for each of the five samples with the market valuation modeling approaches. Fitzpatrick believed that the results of those analyses confirmed the risk comparativeness of those utilities with MDU.

29. In his market valuation modeling approach, Dr. Fitzpatrick developed a model to show the relationship between a sample of firms' market to book value ratios, average annual price/earnings ratios, and other financial data, and from that he determined the sample's average cost of common equity capital (MDU Exh. U, p. 27). He concluded that his analysis of the financial performance of those comparable companies demonstrates that MDU's cost of equity capital has been significantly above 13% for the last nine years (MDU Exh. H, p. 29). This study showed MDU's cost of equity capital to be between 15 and 17 percent (MDU, Exh. H, Exh. DBF-64, p. 1 of 1).

30. Dr. Fitzpatrick performed a DCF analysis of various sets of companies which he determined to have comparable risk characteristics to MDU. The results of his analyses showed that

the average cost of common equity capital for those companies was then between 15.9% and 17.4% (MDU Exh. H, p. 31). Using implied dividend growth rates in his DCF model, he determined that the cost of equity for the various sets of comparable risk companies ranged from 12.44 percent to 14.35 percent (MDU Exh, H, Exh. DBF-63, p. 1 of 1). Dr. Fitzpatrick, however, stated that implied growth rates have a significant downward bias (MDU Exh. H, p. 36).

31. In his rebuttal testimony, Dr. Fitzpatrick determined that the updated cost of equity for those sets of comparable risk companies ranged between 13.87 percent and 16.48 percent (MDU Exh. I, Exhs. DBF-16, p. 3 of 3; DBF-18, p. 3 of 3; DBF-19A, p. 3 of 3).

32. Dr. Fitzpatrick also computed a DCF cost of equity capital specifically for MDU. He testified:

> The DCF return derived specifically from MDU's dividend yield and ex ante dividend growth rate projections is presently [as of May, 1983] 17.2%. MDU's DCF return based on the 1982 implied dividend growth rate is 17.3%. It is apparent that MDU's cost of common equity capital on a consolidated basis is at least 17.0%. (MDU Exh. H, p. 36)

33. In his rebuttal testimony, Dr. Fitzpatrick determined that MDU's updated DCF equity returns ranged between 15.51 and 18.01 percent, based on updated yield data and growth projections of Value Line, Solomon Brothers, and Merrill Lynch (MDU Exh. I, Exhs. DBF-16, p. 3 of 3; DBF-18, p . 3 of 3; DB F - 19A, p . 3 of 3).

34. In his original testimony, Dr. Fitzpatrick summarized that the results of his three studies fully supported MDU's requested return on common equity capital of 15.5% (MDU Exh. H, p. 37). In his rebuttal testimony, Fitzpatrick summarized the results of updating his studies and determined that as of late December, 1983, MDU's cost of common equity capital was between 15.5% and 18% (MDU Exh. I, pp. 4-5).

<u>MCC</u>

35. MCC witness Dr. Caroline Smith used a discounted cash flow (DCF) model to determine MDU's return on common equity. The DCF analysis yielded a-range of return on equity-of 12.5 to 13 0 percent (MCC Exh. 1, p. 16). Dr. Smith examined the reasonableness of her DCF

approach by performing a comparable earnings study. Dr. Smith recommended that the Commission allow a 13.0 percent common equity return . (MCC Exh . 1, Exh. CMS-1, p. 1 of 1)

36. Concerning the dividend yield portion of the DCF model, Dr. Smith calculated dividend yields for 95 electric and combination electric and gas utilities traded on the New York Stock Exchange on an average price basis for the six months from April through September, 1983. The average dividend yield for the 95 companies was 10.48 percent. (MCC Exh . 1, Appendix B, p. 2)

37. Expected dividend growth was calculated by examining growth rates in dividends, earnings, and book value over a ten year period for the companies in the study. The weighted average of all growth rates utilized in the study of these companies was 3.69 percent during that time period. (MCC Exh. 1, Appendix B, pp. 4,8)

38. Dr. Smith used her DCF model to show the relationship between the cost of equity for the Applicant and the industry as a whole. She used the DCF statistical analysis to estimate MDU's cost of common equity capital. (MCC Exh. 1, p. 8)

39. In explaining her recommendation of 12.5 to 13.0 percent return on common equity, Dr. Smith summarized that the Company's dividend yield was 9.2 percent, based upon market prices over the six-month period ended September 30, 1983, and the indicated dividend rate at the end of September (MCC Exh. 1, pp. 16-17). Her-estimate of the long-term dividend growth investors anticipate for MDU is in the range of 3.25 to 3.75 percent, which reflects an expectation that MDU will continue to have high growth relative to the industry, but not to the same degree that was true in the past (MCC Exh. 1, pp. 27-28)

40. As a test of reasonableness for her DCF analysis, Dr. Smith performed a comparable earnings study. In this study, she "examined the rate of return earned on common equity in recent years by regulated electric and combination utility companies as well as returns earned by firms in the unregulated sector of the economy" (MCC, Exh. 1, p. 29). Dr. Smith concluded that the return on common equity for all industries (regulated and unregulated) was 11 percent during 1982, while earnings in the utility industry have been in the 11 to 13 percent range over the 1972-81 period (MCC Exh. 1, p. 34).

41. Both MDU and MCC used a DCF model to determine the cost of equity in this proceeding. The Commission has consistently preferred the DCF approach to determining cost of equity to other models based on its widespread acceptance as the most objective and accurate means of measuring investor expectations. In each DCF model in this case there - are elements which are based upon the judgment of the particular witness. Dr. Fitzpatrick performed a DCF analysis of 5 sets of comparable companies, and Dr. Smith evaluated 95 companies in her model. This Commission has consistently preferred the process of evaluating many companies in the DCF model so that factors which are unique and unusual to a particular firm can be eliminated or disregarded as being atypical utility conditions. In determining the growth portion of the DCF equation, Dr. Fitzpatrick placed more weight on the Value Line projected dividend growth rates than on the implied dividend growth rates (MDU Exh. H, pp. 31-32, 34-36). The Commission historically has downplayed the significance of such subjective projections because they are difficult to test. Fitzpatrick analyzed the accuracy of Value' Line's dividend growth rate projections compared to actual dividend growth rates achieved by various electric utility companies. He concluded that Value Line's growth forecasts have been extremely accurate over the 1977-1983 period with an average of 5.63 percent projected growth compared to an average of 5. 57 percent actual growth (MDU Exh. H, pp. 34-35). Dr. Smith of MCC disagreed with Fitzpatrick's conclusion based on what she perceived as two errors in his comparison: (1) his data sources have conflicts in matching of time periods; and (2) he focused exclusively on dividend growth in his comparisons while neglecting book value and earnings growth (MCC Exh. 1, pp. 36-38). In his rebuttal testimony, Dr. Fitzpatrick presented evidence to address the concerns of Dr. Smith. The Commission agrees that some of Dr. Fitzpatrick's data indicates that Value Line's projections of short-term growth have proven to be relatively accurate. The data also shows, however, that the growth projections have been totally inaccurate in some instances. Overall, therefore, the Commission finds the MCC approach to DCF analysis preferable to that of the Company in this proceeding.

42. In determining MDU's cost of common equity, the Commission concentrated on Dr. Smith's Appendix B, Tables B-7, B-8, and B-9. The Commission chose to disregard Smith's Table B-6 in calculating the proper return because this table represents an extreme low based on a single

growth factor. Dr. Smith's Tables B-7 and B-8 incorporate MDU's two most important growth rates and all growth rates based on the calculations of Table B-2. Tables B-7 and B-8 also incorporate industry yield and growth figures, MDU-specific yield and growth figures, and an MDU risk factor. MDU's risk factor was an area of contention in this case. The Company contended that Dr. Smith's comparison of MDU risk to that of the industry during recent MDU cases has fluctuated wildly even though the utility industry is generally stable. Under cross-examination, Dr. Smith responded:

> Well, you're making an assumption that all risk relationships stay constant. I'm not willing to join you in that assumption.
>
> The way I go about my analysis is to estimate what the cost of common equity is for the industry versus the Company, and, on the basis of that, I draw conclusions about relative risk. This is quite different from the armchair kind of analysis where we might speculate that MDU were more or less risky and then draw conclusions about the cost of equity on that basis.
>
> * * *
>
> And that's what I say in my testimony. I say that because that's what the results of my analysis tell me. But I don't think it would be reasonable for you to think that MDU would always be more risky than the industry or less risky than the industry. Both the risk of MDU and the risk of the industry change all the time, particularly in the past, say, six or eight months with the problems that we've had with nuclear power in the electric industry. That's made for big shifts in risk. MDU has been fortunate to not have the problem of increased risk related to this nuclear-power construction problem. (TR, pp. 317-319)

43. The Commission agrees with Dr. Smith's analysis of MDU versus industry risk. Because of the nature of the utility industry, it should have a relatively stable risk factor over the long-run. However, short-term fluctuations for the industry as a whole seem quite logical because, for example, it is a capital intensive industry which has experienced some recent financial problems relating to construction programs, especially nuclear power plants. With that concept in mind, Dr. Smith's risk analysis appears accurate in that MDU's unique characteristics should cause to some degree differentiation in the Company's position of being more or less risky than the utility industry.

Evidence of MDU's current position of being less risky than the industry as a whole is apparent: (1) In 1982, MDU, on a consolidated basis, had perhaps the highest equity return in the industry of over 17 percent (TR, p. 302); (2) MDU has a more than adequate supply of natural gas; (3) MDU has no current major construction project in process; and (4) MDU has experienced no nuclear power construction financial problems. The Commission, therefore, finds Dr. Smith's risk analysis in this proceeding to be an accurate representation of MDU's risk in relation to that of the utility industry as a whole.

44. Concerning dividend yield, since the approved capital structure has been updated through September 30, 1983, a proper matching occurs by using a six month average of dividend yields for the period ended September 30, 1983. The Commission, therefore, determines Dr. Smith's proposed average MDU dividend yield of 9.2 percent to be proper in this proceeding. The results of Tables B-7 and B-8, 12.1 percent and 14.6 percent, represent to the Commission the acceptable range of reasonableness for determining MDU's cost of equity. The two most important growth rates -- three-year book value growth, and seven-year earnings growth -- taken together explain a large percentage of the variability in dividend yields based on the data on Table B-2 (MCC Exh. 1, Appendix B, p. 9). The Commission supports the use of the two most important growth rates in the calculation of cost of equity capital because of the strong statistical correlation of the two growth rates to dividend yields. The two most important growth rates, therefore, represent to the Commission a very reasonable low end of the growth range in determining MDU's cost of equity. Incorporating all growth rates over a ten year period serves to give an overall view of MDU's cost of equity in relation to the industry as a whole over a large enough time period to show definite tendencies. The Commission, therefore, believes that the all growth rates analysis results in a very reasonable high end of the growth range in determining MDT J's cost of equity. The Commission, therefore, believes that utilizing 12.1 percent and 14.6 percent offers a reasonable approach to meld together industry and Company figures on a weighted basis. The Commission, therefore, determines, the averaging of the results of Dr. Smith's Tables B-7 and B-8 to be proper in this proceeding to determine MDU's cost of equity. The resulting approved cost of common equity in this proceeding is 13.35 percent (9.2 + [(2.9 + 5.4) - 2] = 13.35).

45. Since the overriding goal of the Commission is to determine a reasonable cost of equity capital, the Commission observes that one noteworthy test of reasonableness appears in Dr. Fitzpatrick's exhibit showing his DCF analysis using implied dividend growth rates for his five sets of utility companies.

46. Although Dr. Fitzpatrick choose not to incorporate this data in his recommendation because of downward inflationary bias, the Commission concludes that inflation is currently at a low enough level to minimize this concern. The average of the DCF results on that page is an industry average of 13.32 percent, very similar to the approved level of 13.35 percent (MDU Exh. H, Exh. DBF-63, p. 1 of 1). ln rebuttal testimony, Mr. Ian B. Davidson stated, "The concensus is that MDU's dividends will continue to grow at least in the 8-10 percent range" (MDU Exh. G, p. 4). The Commission concedes that such growth is perhaps feasible in the short-run, but maintaining such a level in the long-run seems unrealistic, especially considering MCC's cross-examination of Mr. Davidson concerning earned return five years in the future while experiencing high levels of compound growth (TR, pp. 212-215) Dr. Smith provided a detailed description of the relationship between yields and growths:

> Long-run growth in dividends requires growth in earnings per share, which in turn, depends upon growth in book value. Because of this relationship, the historical growth patterns in earnings and book value are also important determinants of future growth in dividends. Investors apparently recognize this, as is evidenced by the high correlation coefficients between recent yields and longer term earnings and book value growth rates. (MCC Exh. 1, Appendix B, p. 6)

The Commission finds Dr. Smith's analysis of the relationship between dividend yields and growth to be a proper approach in showing the importance of the long-run as opposed to concentrating on short-term trends. The approved equity cost level of 13.35 percent also compares very well with the industry average of 13.15 percent, calculated on Dr. Smith's Table B-5 by averaging the two most important growth rates and the all growth rates. This comparison illustrates the fact that MDU has been slightly outperforming the industry.

Rate of Return

47. Based on the findings for long-term debt, preferred stock, and common equity in this proceeding, the following capital structure and costs resulting in a 10.84 percent overall rate of return are determined appropriate:

Description	Amount (000)	Ratio	Cost	Weighted Cost
Long-Term Debt	$ 64,701	40.91%	9.03%	3.69%
Preferred Stock	25,849	16.35	8.79	1.44
Common Equity	67,581	42.74	13.35	5.71
Total	$158,131	100.00%		10.84%

PART C

RATE BASE

48. Consistent with previous Commission decisions, both MDU and MCC proposed a 1982 average rate base, adjusted to include certain known and measurable changes. One of the primary considerations of the Commission in rate base decisions has always been proper matching of test year income with the plant that produced that income. The Commission, therefore, finds a 1982 average rate base, adjusted for certain known and measurable changes, to be appropriate in this proceeding.

Plant Additions

49. The Company proposed to include nonrevenue-producing major plant additions and retirements that were scheduled to be completed on or before September 30, 1983, which is nine months after the end of the test year. Mr. Donald R. Ball of MDU testified, "These non-revenue producing additions are necessary to provide adequate transmission capability to move gas through the system to meet existing consumer requirements and for replacement" (MDU Exh. O, pp. 14-15). He also stated that the distribution additions are for replacement of existing facilities (MDU Exh. O, p. 15).

50. MCC witness, Mr. Albert E. Clark, proposed to exclude these post-test year plant additions from the rate base. Mr. Clark believed that inclusion of these additions would create an improper mismatch between operating income and the rate base that produced that income (MCC Exh. 2, pp. 7-8). As an example, Clark discussed MDU's new Fort Peck compressor station:

> The Company has claimed that this new station is " . . . so efficient that fuel savings will pay for the $3.2 million new plant in less than four years." This is an outstanding example of the mismatch that is caused by adding "nonrevenue-producing" post-test year plant to rate base. If the Company's claim is correct and if this plant is allowed in rate base, then the Company's expenses should be reduced by $800,000 to reflect the concommitant fuel savings.(MCC Exh. 2, p. 8)

51. In rebuttal, Mr. Ball of MDU claimed that exclusion of the plant additions "compounds the problem of regulatory lag and attrition" which he felt has plagued MDU's gas operations for many years (MDU Exh. P, p. 1). Mr. Ball also stressed that the Company made no claim for increased operating costs for the new or additional facilities, but only requested a return on the plant additions (MDU Exh. P, p. 2).

52. During cross-examination by Mr. Nelson of the Commission, Mr. Clark addressed the question of attrition in relation to the exclusion of posttest year plant additions:

> Q. Why would the Company not experience attrition as a result of not allowing non-revenue-producing plant additions in the rate base?
>
> A. Well, I think we have to -- I have to drop down to that bottom line and look at non-income producing. I see a mismatch created if you include post-test-year plant additions that have a potential to either increase revenues or to decrease expenses. By eliminating that mismatch, I don't see where you create attrition.
>
> (TR, pp. 424-425)

53. The Commission believes that Mr. Clark's above argument is crucial in maintaining the integrity of the historical test year concept. Matching must occur between operating income and the rate base that produced that income. When such a matching is properly realized, the Company

is given fair treatment and attrition is minimized. Inclusion of additional plant without reflecting associated revenue and expense adjustments renders useless the computation of rate of return earned before any allowed revenue increase. Allowing a return and depreciation expense recovery on a plant addition without also reflecting, for example, decreased operating expenses resulting fro~n more efficient operation results in a windfall to the Company and an excessive expense to the consumer. The Commission endorses the historical test year concept and, therefore, believes that the inclusion in rate base of post-test year plant additions without commensurately including the net operating income effects of such inclusion results in a mismatch which is unacceptable. The Commission, therefore, finds the rate base adjustments proposed by MCC concerning post-test year plant additions (plant in service reduction of $3,661,504; accumulated depreciation decrease of $49,107; and accumulated deferred income taxes reduction of $36,755) to be proper in this proceeding.

Acquisition Adjustment

54. In 1980, MDU purchased the Thermopolis lateral from Wyoming Gas. The acquisition adjustment at issue in this proceeding is the difference between the cost paid by MDU for the Thermopolis lateral and the net book value of this lateral appearing on the books of Wyoming gas at the time of the purchase.

55. Based on Montana's "original cost statute, " 69-3-109, MCA, MCC witness Clark proposed to eliminate from rate base the amount of the acquisition costs exceeding the net book value on the books of Wyoming Gas at the time of purchase (MCC Exh. 2, Sch. 3, p. 4 of 6).

56. Mr. Clark provided an alternative recommendation should the original cost statute not be deemed controlling. He stated that the minimum requirements for including an acquisition adjustment in rate base should be (1) the acquisition's necessity; (2) the acquisition's prudence; (3) a showing that the acquisition was an arms-length transaction; and (4) the acquisition's reasonableness (MCC Exh. 2, p. 11). Clark noted that the Company's original pre-filed testimony had failed to address these issues.

57. In rebuttal testimony, Mr. David P. Price of MDU discussed the requirements outlined by Mr. Clark above. Mr. Price stated that MDU determined that new construction of a gas

supply line to duplicate the Thermopolis lateral would cost between $748,990 and $868,000, whereas MDU was able to purchase the existing Thermopolis lateral from Wyoming Gas for $460,797 ($434,414 purchase price plus overheads), a savings of between $288,193 and $407,203 (MDU Exh. L, p. 9). Mr. Price also discussed the negotiations process in an effort to show they were arms-length (MDU Exh. L, pp. 10-11). MCC did not directly respond to this rebuttal testimony, but rather requested the Commission to view it "with a critical eye."

58. The Commission concludes that both parties' positions are unacceptably extreme, and that a more reasonable approach is available to balance traditional ratemaking and statutory concerns with general acceptance of Mr. Price's testimony. The following treatment is widely practiced, and appears to offer the fairest method of handling the Thermopolis lateral acquisition adjustment: (1) the net depreciated investment level on the books of Wyoming Gas at the time of the purchase should be allowed in rate base; (2) the purchase amount in excess of the net book level on the books of Wyoming Gas at the time of the purchase should be amortized as a recoverable expense over the remaining life of the lateral; and (3) the unamortized balance of excess purchase cost should not be allowed in rate base, but, rather, will be a below-the-line item. This treatment allows for consideration of concerns of both MDU and MCC, and is consistent with the treatment of this issue by the Federal Energy Regulatory Commission (FERC). For matching purposes, the Commission finds that one year's amortization will be applied for this test year. Subsequent rate filings should allow for MDU to recover the approved purchase costs in a manner consistent with this approved treatment. The Commission, therefore, finds the elimination of the acquisition adjustment from rate base in the amount of $119,654 to be proper in this proceeding.

Materials and Supplies

59. MCC proposed to reduce materials and supplies by $5,118. Mr. Clark testified, "When the Company made its adjustment to convert beginning and end of test year average to the average of thirteen month-end balances for the test year, different shrinkage ratios were used" (MCC Exh. 2, pp. 11-12). Clark proposed to use the same shrinkage ratio for the 13-month average balance as MDU) used for its beginning and ending average calculation (MCC Exh. 2, p. 12).

60. The Company did not rebut Clark's proposal, and the Commission believes that the shrinkage ratio should be the same for the two average balance calculations. The Commission, therefore, finds a reduction in the materials and supplies portion of rate base in the amount of $5,118 to be proper in this proceeding.

Gas Stored Underground

61. MCC witness Clark proposed to reduce the noncurrent and current gas stored underground by a total of $70,940. Mr. Clark calculated the balances at the average of 13 month-end balances rather than the beginning and ending test year balances as MDU proposed. Clark testified, "The adjustment is identical in concept to the use of thirteen-month averages for materials and supplies and prepayments that the Company has used" (MCC Exh . 2, p . 12).

62. The Company did not rebut Mr. Clark's proposal, and the Commission believes that consistency should be observed in the calculation of average balances for such rate base items as materials and supplies, prepayments, and gas stored underground. The Commission, therefore, finds a reduction in the gas stored underground portion of rate base in the amount of $70,940 to be proper in this proceeding.

63. The Commission has become aware that MDU has injected substantial storage volumes above and beyond Frontier limits, which volumes have not been included in the Company's rate base. In Docket No. 83.10.74, the Company shows such volumes of 21,327,267 Mcf at a value of $71,880,054. In Order No. 5039, now the subject of a temporary injunction, the Commission ordered MDU to account for the 21,327,267 Mcf of gas in a manner that assigned the most expensive gas that the Company was then taking to that storage. This adjustment would have two direct accounting effects: 1) the cost of gas currently charged is reduced, and 2) conversely, the dollar value assigned to storage increases from $71,880,054 to $98,249,428. The basis for these calculations is the Commission's expectation that MDU will continue to purchase gas from the same sources and in the same manner as is its current practice.

64. Since MDU has not requested rate base treatment of the 21,327,267 Mcf, neither of the above dollar amounts has any significance to this case. The Commission draws attention to this

situation, however, to note that future rate base consideration will be afforded to these storage volumes within the confines of traditional and reasonable ratemaking principles, including the opportunity to earn a return on used and useful property.

Unamortized Gain

65. Mr. Clark of MCC proposed to reduce the Company's pro forma rate base by the unamortized gain on reacquired debt. Clark referred to Interim Order No. 5020 in this Docket and Order No. 4918b of Docket No. 82.6.40 in defense of his adjustment in the amount of $201,630 (MCC Exh. 2, p . 13).

66. Mr. John F. Renner of MDU countered MCC's proposed adjustment in his rebuttal testimony. Mr. Renner stated that in the case of unamortized gain on reacquired debt, "the Company must expend funds without regard to the source of those funds in order to realize that unamortized gain" (MDU Exh. F, p. 2). Renner maintained that MCC's proposal would result in a double credit to ratepayers, "first by deducting the unamortized gain from rate base and then again reducing interest expense for amortization of that gain" (MDU Exh. F, p. 2).

67. The Commission disagrees with the reasoning of Mr. Renner. As discussed in the Cost of Capital section of this order, the Company and MCC agree that interest expense should be reduced for amortization of the gain from reacquired debt. The remaining question is what proper treatment should be given to the unamortized balance of the gain from reacquired debt. In past cases, the Commission has treated deferred taxes as a rate base reduction because it is a deferred credit and has no return requirement. Unamortized gain is also a deferred credit. The Commission finds that because of the reacquisition of the debt at a discount, a cash savings to MDU results which is accounted for as a gain. By deducting the unamortized portion of the gain from rate base, the Commission is precluding the Company from earning a return on the unamortized balance of the gain, and, therefore, allowing the consumers to realize full benefit from the transaction. The Commission finds that the unamortized gain is a deferred credit, similar to deferred taxes, for ratemaking purposes. The Commission determines, therefore, that the unamortized gain on

reacquired debt should be treated as an allocated deduction from rate base in the amount of $218,562, using the approved allocation factors.

Gas Prepayments

68. Mr. Clark of MCC proposed to reduce the gas prepayments portion of rate base in the amount of $213,825. Clark testified, ".. . [T]o the extent the Company's gas prepayments have been reduced by post-test year recoupments, it is appropriate to reduce the Company's pro forma rate base for this known and measurable reduction of the test year gas prepayment balance" (MCC Exh. 2, pp. 13-14).

69. In his rebuttal testimony, Mr. Ball of MDU challenged the use of 1983 estimated recoupments of gas prepayments rather than actual figures (MDU Exh . P, p . 2).

70. The Commission agrees with Mr. Clark that post-test year recoupments are a proper offset to gas prepayments. The Commission used 1983 estimated recoupment figures for calculation of gas prepayments in Interim Order No. 5020 of this Docket because the actual figures were not yet available.- In MDU's Late Filed Exhibit No. 11, the Company reported that the actual recoupments of gas prepayments during 1983 were 128,409 Mcf and $494,960. The Commission finds the use of the actual 1983 recoupments of gas prepayments to be appropriate in the calculation of gas prepayments in this proceeding. The Commission, therefore, finds a reduction of the gas prepayments portion of rate base in the amount of $130,993 to be proper in this proceeding.

71. In approving the above adjustment to gas prepayments, the Commission requires MDU in the next general gas- filing to provide a full explanation of the gas prepayment and recoupment process. The Commission expects this issue to be fully examined during the next general gas proceeding to determine its necessity, prudence, and administration thereof.

Total Rate Base

72. As a result of the approved adjustments described above, the Commission finds the proper amount of total 1982 average rate base, adjusted for known and measurable changes, to be $50,249,645.

PART D

REVENUES, -EXPENSES, AND REVENUE REQUIREMENT

73. Mr. Donald Ball of MDU sponsored exhibits and testimony which detailed the cost of service and average rate base amounts which support the revenue increase request of $7,917,936. The request was based on an overall rate of return of 11.548 percent. Mr. Ball indicated that the Company utilized a 1982 historical test period as a basis for its filing and made various 1983 adjustments. Mr. Ball concluded that, based on the test period ending December 31, 1982, the Company would require additional revenues of $7,917,936 in order to earn an overall return of 11.548 percent (MDU Exh. O, p. 17).

74. Mr. Albert E. Clark, expert witness for MCC presented testimony and exhibits on the cost of service and the proper rate base. Mr. Clark urged the use of an average 1982 rate base, as was also proposed by the Company, adjusted for certain known and measurable changes. He prepared a series of schedules and presented related testimony which culminates with the change in revenues required to produce the 10.69 percent rate of return recommended by Dr. Caroline Smith. Mr. Clark concluded that, based on the 1982 average test year, the Company requires additional permanent revenues of $5,634,388.

Operating Revenues

75. In its filing, MDU proposed several adjustments to revenues. The first adjustment increased revenues by $1,089,143 to reflect the full annual effect of current rates which became effective August 8, 1983. The second adjustment reduced revenues by $2,636,216 to reflect normal weather since the weather during 1982 was colder than normal. The third adjustment, a revenue increase of $144,116, restates revenue from contract industrial sales volumes to expected sales levels. The net effect of the above adjustments to operating revenues result in pro forma revenues of $69,672,527. (MDU Exh. O, p . 9; Exh. DAB-11, p . 1 of 2)

76. Mr. Clark of MCC proposed no further adjustments to the Company's pro forma revenue figure of $69,672,527.

77. During cross-examination by Mr. Nelson of the Commission, Mr. Ball discussed the recently adopted S-2 and T-3 storage and transport FERC tariffs. Ball stated that MDU and FERC had reached an agreement in principal to use the deferred gas cost account to track the revenues from the S-2 and T-3 tariffs and flow those revenues back to MDU's customers (TR, pp. 415-416). The Commission agrees that these revenues should be flowed back to MDU's customers as a known and measurable change, and finds the FERC method of tracking the revenues with the deferred gas cost account to be proper for future proceedings. Because the credit to the consumers is being flowed through-via a revenue adjustment in this proceeding, the Company will in the future begin crediting ratepayers through the deferred gas cost account at the point in time when MDU receives revenues from the S-2 and T-3 tariffs in excess of their projected 1984 level of $561,000 on a Company-wide basis, or $181 , 457 as allocated to Montana as the approved revenue adjustment in this proceeding. Tracking those revenues will from thereon be handled through the deferred gas cost account, which will serve to flow back the benefits to the ratepayers through lower gas costs.

78. In MDU's Late-Filed Exhibit No. 12, the Company provided actual 1983 and projected 1984 volumes and revenues received under FERC Rate Schedules S-2 and T-3. For 1983, the sales volumes and revenues were 1,540,298 Mcf and $308,060. For 1984, the projected volumes and revenues were 2,805,000 Mcf and $561,000. Since these FERC tariffs were adopted in the latter portion of 1983, the Commission believes that the actual 1983 revenue figure of $308,060 is inadequate as a representative annualized level of sales. The Commission, therefore, finds- the Company's projected 1984 revenue level of - $561,000 to be a reasonable proxy for annualizing these known and measurable revenues, based on MDU's experience in dealing with these new rate schedules. Montana's portion of this revenue increase is $181,457 for this proceeding.

<u>Total Revenues</u>

79. The Commission determines that the net downward adjustments to revenues in the amount of $1,402,957 proposed by the Company in their filing and adopted by MCC are proper in this proceeding and reflect preferred ratemaking procedures. The approved level of S-2 and T-3

revenues included in this proceeding is $181,457. The resulting approved pro forma revenues are $69,853,984.

Expenses

Cost of Gas

80. In its filing, MDU restated test year cost of gas to the level of cost developed by the Company in Docket No. 83.5.34, a gas cost tracking adjustment filing applied on an interim basis in current rates which became effective on August 8, 1983. The resulting adjustment was a decrease to the cost of gas in the amount of $5,842,025. This adjustment matches the cost of gas for expense purposes to the cost of gas included in the rates used to determine the Company revenue adjustments. (MDU Exh. O, pp. 9-10)

81. MCC witness Clark proposed no further adjustment to the cost of gas and adopted the Company's adjustment.

82. The Commission finds that the downward adjustment to the cost of gas in the amount of $5,842,025 proposed by the Company and adopted by MCC is proper in this proceeding and reflects ratemaking procedures which have consistently been approved by this Commission.

Plant Additions

83 Mr. Clark of MCC proposed to eliminate the depreciation expense and taxes related to the post-test year plant additions proposed by MDU to be included in rate base. Because he had eliminated these post-test year plant additions from rate base, Mr. Clark believed it would be proper to remove the expense items related to the removal of the plant additions (MCC Exh. 2, pp. 14-15).

84. In the rate base section of this Order, Finding of Fact Nos. 49 through 53, the Commission discussed whether or not to include the post-test year plant additions in rate base and determined that these plant additions should not be included in rate base. Such exclusion from rate base of these plant additions necessitates the elimination of related expenses to achieve proper matching. The Commission, therefore, finds the MCC proposed adjustments to depreciation expense

and taxes, related to the elimination of post-test year plant additions from rate base, resulting in a net decrease of operating expenses in the amount of $96,092 to be proper in this proceeding.

Rate Case Expense

85. The Company proposed to charge rate case expense currently rather than amortizing it over a period of two years, as has been done in the past. Mr. Ball testified that the one-year amortization matches the frequency of gas rate filings in Montana experienced each-year, except 1977, since 1975 (MDU Exh . O, p . 11) .

86. MCC witness Clark did not accept MDU's proposal of a one-year amortization of rate case expense. He said that he saw no reason for departing from the two year amortization (MCC Exh. 2, p. 15).

87. The Commission believes in the concept that rate case expense for utilities should be amortized over a period of time of at least two years. Even though MDU has filed for general rate relief for their Montana gas operations on a fairly regular basis over the last few years, the Commission does not believe that it would be correct to assume that this trend will necessarily continue based on current inflation rates. The Commission, therefore, determines the two-year amortization of rate case expense, resulting in an expense decrease of $27,769 to be proper in this proceeding.

Labor Expense

88. MDU's labor costs were annualized recognizing progression increases and general wage increases received during 1982 and through September 30, 1983. The Company's labor expense was calculated based on the average number of employees in 1982. (MDU Exh. O, p. 10)

89. Mr. Clark of MCC proposed to reflect actual payroll expenses for the 12 months ended September 30, 1983, using average test year (1982) employees . Clark justified his proposed reduction of $142,813 by claiming that the Company's adjustment was based "to a large degree on speculation and estimates" (MCC Exh. 2, p. 16). On page 16 of their Brief, MCC adjusts the above

number to $136,247 as a result of using average employees during the 12 month period ending September 30, 1983, rather than test year average employees .

90. In his rebuttal testimony, Mr. Ball of MDU disagreed with Mr. Clark's statement that the Company's labor expense adjustment had been based largely on speculation and estimates Mr. Ball claimed that the labor adjustment is based on known pay levels and increases pursuant to labor contracts in existence at the time the data was prepared (MDU Exh. P, pp. 2-3).

91. The Commission believes that the proposed approach of MCC is inadequate in that this method does not allow for the annualization of known and measurable salary and wage increases. In past cases, the Commission has allowed the annualization of post-test period contractual wage increases as a known and measurable change. The allowance of such annualization also serves to counteract attrition.

92. The Commission, however, is alarmed by the percentage increase requested by MDU to cover increased labor costs. The proposed increase of 9.6801 percent is disturbing in view of an annual inflation rate of approximately 4.5 percent. The purpose or intention of the Commission is not to attempt to override or negate contracts resulting from the collective bargaining process, but the Commission feels compelled to give MDU a strong message that labor expense percentage increases of this magnitude are indeed questionable, given the present rate of inflation, unless such increases are offset by productivity gains. The following table, MDU's response to the MCC Data Request No. 13 of October 21, 1983, illustrates the Commission's deep concern for this rapidly growing expense item:

Request No. 13: Provide a schedule that shows total wages and salaries for 1979, 1980, 1981, 1982 actual and 1982 pro forma for each of the following:

a) Officers
b) Non-union other than officers
c) Union

Response: The requested schedule is as follows and is based on the W-2 reporting period:

Year	Officers	Non-Union	Union
1979	$636,282	$15,576,593	$12,958,785
1980	675,646	18,610,587	15,435,997
1981	673,281 1/	21,807,716	18,022,099
1982	840,938 2/	24,028,479	19,828,227
1982 pro forma 3/	922,342	26,354,460	21,747,619

1/ Reflects reduction of one officer.
2/ Reflects addition of two officers.
3/ 1982 actuals plus 9.6801% per Rule 38.5.157, page 3 of 15.

93. The Commission realizes that some of the above large increases undoubtedly represent construction projects when the number of laborers increases significantly. At this time, however, MDU has no large construction projects, and, therefore, the overall number of employees should be stabilizing. In fact, with declining off-system gas sales, perhaps the overall work force for MDU should be declining.

94. Of the above types of MDU employees - officers, non-union other than officers, and union - the Commission most often heard concerns of consumers in public testimony during satellite hearings for this Docket relating to the level of salaries and increases for the officers of MDU. Many consumers expressed great disappointment that the Company had not made an effort to hold executive salary levels to reflect hard economic times which have prevailed over the last couple of years, especially the 1982 test year, and asked the Commission to consider the matter closely. The Commission recognizes that the amount of officer salary increases in this case are different for ratemaking purposes than the actual figures because of allocation to gas, annualization, and the labor expense methodology in this proceeding. The Commission, however, believes that a strong message must be sent to MDU that such officer salary increases fail to reflect the severe economic conditions under which consumers have been struggling. The Commission also notes that large officer salary increases seem unwarranted considering the fact that the inflation rate has overall been in a declining

state since the beginning of 1982. If stockholders are rewarding top executives for increased productivity and resulting increased profits in troubled economic times, then it seems only reasonable that just as they share in the rewards or profits, so must the owners assume a fair portion of the burden of increased officer salary levels that the stockholders deemed justified for their increased return on investment. The Commission is satisfied that the present base salary levels are adequate to attract competent officers to work for MDU. Any officer salary increases desired by the owners should be made up from productivity gains or from the stockholders themselves. The Commission, therefore, determines that the total disallowance of increase in officers' salaries over the actual 1982 amount in the case, in the unallocated amount of $81,404 (922,342-840,938 from above), $11,959 allocated to Montana, is proper in this proceeding.

95. MDU proposed to add overtime, commissions, bonuses, part-time and temporary labor, and other to the average payroll in order to determine the total labor expense. Commissions and bonuses should relate directly to productivity gains and, therefore, should not be included in the labor expense calculation. Also, the commissions related greatly to the nongas utility activity of appliance sales and, therefore, should not be included as a viable component in determining the percentage increase to gas utility labor expense. The component of "other" was unexplained and, therefore, cannot be included in the calculation of labor expense percentage increase because it is unidentified as relating to the gas utility. The following table shows the calculation of this portion of the labor adjustment:

Commissions	$176,383
Bonuses	44,284
Other	76,924
Total Amount Disallowed	$297,591
Gas Portion	130,693
Montana Portion	$ 43,717

96. Based on the above discussions and calculations, the Commission finds a reduction in labor expense in the amount of $55,676 (11,959 + 43,717) to be proper in this proceeding. In making this adjustment, the Commission strongly adds that this entire issue will be examined very closely in MDU's next general gas filing.

FICA Taxes

97. The approved adjustment to labor expense results in a $4,980 reduction in FICA taxes. The Commission determines that this adjustment is appropriate since this reduction coincides with the Commission approved labor adjustment which was a reduction in the amount of $55,676.

Other Taxes

98. Mr. Clark of MCC proposed to reverse the Company's adjustment which provides a blanket 10 percent increase to all taxes other than income taxes except FICA and MCC taxes, based on a comparison of 1983 accruals to 1982 expenses. Clark stated that only by chance would the Company's accruals actually match the annual expense, because accruals represent an estimate of what the expense is likely to be. Clark testified that the Company did not offer any evidence that these tax expenses are going to increase at an annual rate of 14 percent, and, therefore, the adjustment should be rejected because it does not fit the Commission's known and measurable test. Finally, Mr. Clark found error with the Company's calculation in that it includes FICA and MCC taxes in both the numerator (1983 accruals) and the denominator (1982 expense), while the purpose of the adjustment is to reflect increases in taxes other than income taxes except FICA and MCC taxes. (MCC Exh. 2, pp. 17-18)

99. The Company did not rebut Mr. Clark's proposal, and the Commission agrees that MDU's proposed adjustment does not meet the known and measurable test because of its speculative nature. The Commission, therefore, finds a reduction in other taxes in the amount of $97,432 to be proper in this proceeding.

Amortization of Pre-1974 Gain

100. In his proposed adjustments, Mr. Clark included an allowance for the amortization of pre-1974 profit on debt reacquired at a discount. Mr. Clark explained:

> Before 1974, MDU credited the gain on reacquired debt directly to retained earnings. Since 1974, the gains have been credited to Account 257-Unamortized Gain on Reacquired Debt. This account has been treated as a rate base deduction. But, the pre-1974 gains are not included therein. Therefore, as this Commission has previously

> ruled in MDU rate cases, and as ordered for the purpose of setting interim rates in this proceeding, I have credited income for the amortization of the pre-1974 gains on reacquired debt. (MCC Exh. 2, p. 19)

101. The Company did not rebut Mr. Clark's proposal, and the Commission has consistently ruled that pre-1974 profit from reacquired debt should be flowed through over time to consumers to reflect a benefit to those who had been paying for the cost of the debt before being reacquired. The Commission, therefore, finds the MCC adjustment in the amount of $14,000 to reflect the pre-1974 gain on reacquired debt to be proper in this proceeding.

Industrial Memberships

102 MCC witness Clark proposed to remove a portion of the dues paid by MDU to certain associations and industrial groups Clark proposed to eliminate a majority of the associations in question, resulting in an adjustment of $4,216 (MCC Exh. 2, p. 19). Concerning the two major associations, American Gas Association and Midwest Gas Association, Clark did not recommend to eliminate their related costs from operating expenses. He did, however, recommend "that the Commission order the Company to justify the inclusion of these costs in cost of service at its next gas rate case" (MCC Exh . 2, p . 20) .

103. The Company did not rebut Mr. Clark's proposal but did address the issue in its Brief. On page 30 of the Brief, MDU stated that such association dues "are a customary part of doing business and a normal business expense for all businesses, not just utilities. " The Company also stressed that the propriety of these expenses should be viewed in the context of the business community as a whole (MDU Brief, p. 31).

104. The stockholders of MDU apparently find the participation in such nongas industry organizations as Old West Trail Foundation and North Dakota Newspaper Association to be proper expenditures. The Commission, however, fails to recognize any benefit to MDU ratepayers for involvement in these nongas industry organizations. The Commission, therefore, finds the elimination of dues in the amount of $4,216 as proposed by MCC to be proper in this proceeding.

105. Concerning those associations which Mr. Clark included as proper expenditures, the Commission agrees with Mr. Clark that this issue should be thoroughly examined during the next MDU general gas filing. For purposes of this proceeding, however, the Commission believes there should be a sharing of costs between stockholders and ratepayers for the association dues included in cost of service by Mr. Clark of MCC. Mr. Clark pointed out that the two associations for which the largest amount of dues are paid, American Gas Association (AGA) and Midwest Gas Association (MGA), sponsor advertising campaigns that could be considered promotional or institutional in nature (MCC Exh. 2, p. 20). The Commission accepts the Company argument that ratepayers receive some benefit from- participation in these organizations, but the Commission also maintains that the stockholder receives some benefit from such membership. In determining the proper and fair sharing percentage for these dues, the Commission considered using a 50-50 percent split but decided that since the exact amount of promotional and institutional advertising of these associations could not be quantified in this proceeding, a moderate approach would be taken. The Commission, therefore, determines that a further reduction of the allowed association dues in the amount of 25 precept, representing a reasonable portion of stockholder benefit from participation in these organizations, is proper in this proceeding.

106. Before calculating the 25 percent reduction of allowed association dues, a minor adjustment must first be considered. In MDU's Late-Filed Exhibit No. 1, the Company provided a copy of the AGA budget for the years 1982, 1983, and 1984. A letter from the AGA addressed to Mr. Joseph Maichel of MDU stated, "Included in the General Activities is the amount of .7% which was reported to the Clerk of Congress as lobbying expenses in accordance with federal law. " Since lobbying is expressly excluded from allowable expenses by law, the Commission finds a reduction in AGA dues in the amount of .7 percent to reflect the known lobbying element of the dues to be proper in this proceeding.

107. Based on the above discussions of various adjustments to association dues expense, the Commission finds a reduction in dues expense in the amount of $12,234 (4,216 + 175 + 7,843 = 12,234) to be proper in this proceeding. In making this adjustment, the Commission stresses that

all association dues must be fully explained, justified, and quantified in the next general gas rate filing.

Pro Forma Interest Expense

108. MCC witness Clark calculated pro forma interest expense using the same procedure used by the Company in its exhibit. The interest expense Clark calculated is somewhat lower than the Company's because he used his adjusted rate base and MCC witness Smith's weighted debt cost rather than the rate base and weighted debt cost proposed by MDU. The Commission finds that a pro forma interest adjustment is proper to reflect the tax effect of interest on construction. By utilizing the approved rate base and weighted cost of long-term debt in the methodology, the Commission finds an increase to Montana Corporation License Tax in the amount of $22,606 and an increase to Federal Income Tax in the amount of $143,657 to be proper in this proceeding.

Forecast Expense Adjustments

109. Background. In Docket No. 82.6.40 MDU proposed certain forecast revenue requirement adjustments (expense adjustments). In its Order No. 4918b the Commission rejected the MDU adjustments. The rejection was premised on the following:

1) violation of the matching principle;

2) actual recent inflation has departed from historic inflation, and

3) failure to account for offsetting productivity gains.

110. Theory. Simply put, forecast expense adjustments attempt to account for likely changes in expense levels since the test year. In the present docket, the Company's proposals are forecasts of 1983 changes (two categories) to 1982 actual expenses for purposes of revenue generation in year 1984 and beyond.

111. MDU's Direct Testimony. In the present docket Company witness Mr. John Castleberry proposed forecast revenue adjustments for two expense categories. In addition, the witness rebutted the Commission's findings for rejecting the Company's expense adjustments in Docket No. 82.6.40. The witness also rebuts the MCC's (witness Mr. Drzemeicki) arguments for rejecting the expense adjustment in the present docket (MDU's rebuttal is discussed below).

112. MDU's witness proposed revenue adjustments for two operation and maintenance (O&M) expense categories: 1) Transmission and 2) Administrative and General (A&G). MDU used statistical (autoregressive) models, and data from the Company's books and records for the time period 1971-1982. The total Company revenue adjustments for these two categories equal $894,912 the Montana share equals $295,999 (Rule 38.5.176, STMT L, Part D, page 7 of 30).

113. MDU performed a validation exercise with each of the two equations (expense categories). The results indicate (to MDU) that the forecasts of categorical expenses become more accurate the nearer the forecasts are to the present. To this end, MDU assumed that the "greatest fluctuations" (with respect to annual data points) occurred in the most recent years.

114. MDU's rebuttal arguments to the three Commission findings (Finding No. 109 above) follow. First, MDU holds that its analysis does not violate the matching principle for the following reasons: 1) the transmission function (expense category) ". . . is properly viewed as a non-revenue producing function."; 2) MDU does not understand how certain A&G expenses relate to sales or the number of customers and 3) MDU could not establish a statistical relation between sales and the number of customers with either of the modeled expense categories.

115. Second, regarding inflation MDU holds, based on statistical analysis, that its nominal dollar model for A&G expenses captures the effect of inflation. This conclusion derives from a comparison (MDU's) of two separate forecasts of A&G expenses. One forecast derives from a one-period autoregressive model using current (nominal) dollars; the second estimate derives from a two-period autoregressive model using constant (real) dollars. The model structures were not held constant.

116. MDU could not derive an estimate of the inflation effect included in the Company's proposed transmission expense adjustment. MDU states that this result stems from the absence of an appropriate inflation index and not the model specification.

117. Third, regarding productivity gains, MDU argues that it has achieved such gains in the past; therefore, since 1983, expense forecasts derive from past -- historic -- data, and since such data incorporates past productivity gains, MDU holds that its models internalize productivity gains.

118. MCC's Direct Testimony. In the present docket, the Montana Consumer Counsel's witness, Mr. James Drzemeicki, testified that this Commission should reject the expense adjustments proposed by MDU.

119. The reasons given by the MCC's witness follow. First, the expense adjustments are not known and measurable. The witness states that the Commission does not have the ability to relate the proposed expense levels to specific aspects of the Company's operation, and that one should be reasonably certain that the adjustment will have the stated impact.

120. Second, the MCC argues that expense-based revenue adjustments ignore future levels of revenues, i.e., are piecemeal and, as a result, violate the matching principle. The MCC also holds that there does not exist a constant relation between the price and marginal products for two substitutable factors of production.

121. Third, the MCC holds that allowance of a forecast expense adjustment provides a disincentive for MDU to operate efficiently. The MCC likens the expense adjustments to an automatic adjustment clause without any means of verification that the costs are prudent and reasonable: allowance of forecast expense adjustments serves as a guaranteed source of revenues irrespective of costs.

122. Finally, the MCC argues that MDU's selective use of the forecast adjustments indicates MDU's lack of confidence in the approach used (in Docket No. 82.6.40 MDU proposed forecast expense adjustments for four additional categories).

123. MDU's Rebuttal Testimony. MDU's rebuttal testimony provides counter-arguments to the MCC's reasons for rejecting MDU's forecast expense adjustments. First, MDU reiterates that the adjustments are known and measurable, arguing that its 1982 expense estimates (Docket No . 82.6.40) were conservative.

124. Second, regarding productivity gains, MDU argues that if one assumes a correlation between the omitted variables and the variable included (the lagged dependent variable) as an explanatory variable, then one has accounted for the impact of the omitted variables. MDU also argues that the MCC incorrectly assumes a relationship between O&M expenses and demand.

125. Regarding the effect of forecast expense adjustments on MDU's incentive to operate efficiently, MDU holds that the Commission can always review the reasonableness of such expense adjustments.

126. Finally, regarding its selective use of forecast adjustments, MDU states that the reason for not statistically modeling production, other gas supply and customer accounts expenses is because the Company was able to document virtually all of the changes in these expenses from 1981-1982. MDU did not statistically model sales expenses due to the lack of an appropriate model.

127. Commission's Decision. The Commission finds that several fundamental problems exist with the Company's proposed forecast expense adjustments and as a result rejects the proposed adjustments.

128. First, the Commission finds that such adjustments equate with built-in automatic adjustment clauses and as a result do not encourage efficient production practices; the Commission could, for example, approve of such an increase for 1983 and the Company could actually incur negative increments -- changes -- in expenses, such as occurred between the years 1974 and 1976 (see Exhibit Nos. JKC-1 and JKC-2). The overall effect of this scenario would be the Company realizing excess profits at the expense of ratepayers.

129. Secondly, the Commission finds that the adjustments are simply not known and measurable. By its own admission, MDU, apparently, could not document the changes with the proposed forecast expense adjustments nor ". . .tie those changes to specific occurrences. " (see Mr. Castleberry's rebuttal, p. 6, ll. 21-24). Acceptance of this proposed adjustment would only be proper for matching purposes if the Commission approved a prospective future test year, rather than an historical test year.

130. Finally, the Commission simply does not have the resources to audit and certify the reasonableness of these forecast expenses. Consideration of these expenses will therefore have to wait until the 1983 forecast year (or a subsequent year) is a test year in a future gas revenue requirements docket.

Regulatory Lag and Attrition

131. The Commission recognizes that attrition can result from confiscatory and unreasonable ratemaking treatment. In an effort to minimize regulatory lag and the resulting attrition in this proceeding, the Commission allowed several ratemaking treatments which will prove to benefit MDU and greatly reduce potential attrition. For instance, to counteract regulatory lag, the Commission granted MDU an interim increase of $4,830,862 on October 3, 1983, less than six weeks after the Company's initial filing of this rate case. The Commission also notes that this gas filing has been processed within the nine month period required by 69-3-302, MCA.

132. Concerning attrition, the Commission in several instances in this proceeding allowed known and measurable changes which occurred after the end of the test year. Outstanding examples are the annualization of post-test year contractual labor expense increases, estimation of rate case expense, and the updating of capital structure and costs. These post-test year allowances, among others, will greatly offset the negative effects of attrition. The Commission also notes with interest that MDU used a 1982 test year but did not file the case until late August, 1983. The use of old test year data in itself can cause attrition, and MDU must take the responsibility for any attrition which results from the use of such an old test year.

133. Another way the Commission has addressed potential MDU attrition is through the gas tracking and deferred gas cost accounting procedure. With these procedures MDU is allowed to recover increased reasonable gas costs in a timely fashion. Another significant step the Commission took to alleviate potential attrition was the approval of the Frontier Gas Storage transaction. Gas sold to Frontier is now out of MDU's rate base. The return on Frontier's investment in stored gas is now a part of purchased gas costs and is recovered automatically from MDU's customers through the deferred gas cost accounting.

134. Based on the above discussion and analysis, the Commission finds that very affirmative efforts have been made in this proceeding to minimize regulatory lag and attrition.

<u>Revenue Requirement</u>

135. The following table shows that additional annual revenues in the amount of $5,701,374 are needed by the Applicant in order to provide the opportunity to earn an overall return of 10.84 percent:

MONTANA-DAKOTA UTILITIES COMPANY

Revenue Requirement-Montana
1982 Test Year

	MDU Pro Forma	MCC Adjustments	Accepted MCC Adjustments	PSC Adjustments	Approved Pro Forma	Approved Increase For 10.84% Return	Approved Total
Operating Revenues	$69,672,527			$ 181,457	$69,853,984	$5,701,374	$75,555,358
Expenses							
Cost of Gas	47,989,548				47,989,548		47,989,548
O&M	15,212,876	$ (470,797)	$ (323,768)	(67,910)	14,821,198		14,821,198
Total	63,202,424	(470,797)	(323,768)	(67,910)	62,810,746		62,810,746
Depreciation and Depletion	2,397,076	(98,214)	(98,214)	-0-	2,298,862		2,298,862
Taxes Other Than Income	1,527,910	(97,432)	(97,432)	(4,799)	1,425,679	5,701	1,431,380
FIT & SIT-Current	312,591	284,734	284,734	292,444	889,769	2,827,617	3,717,386
Deferred Income Taxes	(931,445)	(73,507)	(73,507)	-0-	(1,004,952)		(1,004,952)
Investment Tax Credits	883,694	-0-	-0-	-0-	883,694		883,694
Amortization of ITC	(14,820)	-0-	-0-	-0-	(14,820)		(14,820)
Total Operating Expenses	$67,377,430	$ (221,186)	$ (308,187)	$ 219,735	$67,288,978	$2,833,318	$70,122,296
Amortization of Pre-1974 Gain	-0-	14,000	14,000	-0-	14,000		14,000
Operating Income	$ 2,295,097	$ (235,186	$ 322,187	$ (38,279)	$ 2,579,006	$2,868,056	$ 5,447,062
Rate Base	$54,370,554	$ (4,186,809)	$ (3,651,700)	$(469,209)	$50,249,645		$50,249,645

Rate of Return	4.22%	5.13%	10.84%

PART E

COST OF SERVICE AND RATE DESIGN

136. Background. The existing rate structure evolved from Order No. 4635[1]. In that Order, the Commission found that "(b)ecause utility regulation seeks to emulate the results of competition for an industry characterized by monopoly, marginal cost pricing recommends itself in the design of natural gas rates." (p. 36) The marginal cost of gas supply (i.e. incremental commodity cost or replacement cost) was determined to be the dominant factor in structuring gas rates. The remaining system costs were found to be largely sunk (i.e. nonavoidable or irreversible) and therefore should play a lessor role in the design of rates. (p. 36)

137. The Commission found that setting gas prices at the marginal replacement cost of gas would properly signal the relative scarcity of gas to consumers. This scarcity signal would allow efficiency in resource allocation by screening out uses of gas where it is valued less than its cost while screening in those uses where it is valued at greater than its cost. That is, prices equal to the marginal commodity cost of gas would properly ration the scarce natural gas supply to those uses which are of value greater than its cost, thus contributing to the welfare of society.

138. In Order No. 4635, the Commission found that:

> At the present time, the $2.20 to 2.30 range represents the replacement cost of natural gas to Montana-Dakota Utilities and is, consequently, the cost which should be considered by this Commission when setting rates for the utility's customers. (p. 37)

139. A largely volumetric relationship between cost and price was used to arrive at rates which best reflected the marginal commodity cost of gas. Customer charges were reduced to zero[2]

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[1] April 23, 1980, Docket No. 6695.

[2] Residential customer charges were $4 per meter; MDU had proposed charges of $8 per meter.

and the wintertime gas rate was inverted by creating a unit price for an initial block of 15 Mcf at a level 25 percent below a tail block rate (pp. 38-42).

140. The resulting structure of rates provided rationing price signals for the most price-elastic loads near the marginal commodity cost of gas.

141. Since April, 1980, the MDU gas rates have been changed 16 times on a volumetric or uniform percent basis to reflect authorized changes in revenue levels. Table 1 provides the Order No. 4635 rates and Table 2 provides the existing rates reflecting the subsequent uniform percent or volumetric changes.

142. In this Docket both MDU and the MCC propose structural changes to the MDU rate structure.

TABLE 1

The Order No. 4635 MDU Natural Gas Rate Structure*

		Customer Charge ($/meter-month)	Commodity Charge Winter-first 15 Mcf/all other ($/Mcf)**
Rate 60	Residential		
	Firm	$0	$1.748/$2.330
Rate 70	Commercial		
	Firm	$0	$1.748/$2.330
	Interruptible	$0	2.169
Rate 85	Industrial		
	Interruptible	$0	2.169
Rate 90	Industrial		
	Fuel Oil	-	-

* Derived from historical MDU gas tariff, effective May 27, 1980.
** At 14.73 PSIA.

TABLE 2

The Existing MDU Natural Gas Rate Structure*

		Customer Charge ($/meter-month)	Commodity Charge Winter-first 15 Mcf/all other ($/Mcf)**
Rate 60	Residential		
	Firm	$0	$4.602/$6.136
Rate 70	Commercial		
	Firm	$0	$4.602/$6.136
	Interruptible	$0	5.684
Rate 85	Industrial		
	Interruptible***	$0	5.638
Rate 90	Industrial		
	Fuel Oil	$0	4.000

* Derived from current MDU gas tariff, effective April 16, 1984.
** At 14.73 PSIA.
*** Rate 90 was implemented on a temporary basis on January 5, 1984.

143. The MDU Proposal. MDU witness Mr. Ball (Exh. O) submitted a fully distributed accounting study. The study (Statement M) indicates interclass revenue levels which require a substantial shift from industrial prices to residential prices. These results are summarized in Table 3.

144. MDU witness Mr. Fox proposes gas rates which reflect the results of the fully distributed accounting study (TR, pp. 434-435). The resulting interclass revenue levels are provided in Table 4 and the unit costs are - provided in Table 5.

TABLE 3
The MDU Fully Distributed Accounting Study Results*

	Income ($)	Rate Base ($)	Rate of Return (%)
Residential	-1,152,483	26,779,320	-4.30
	1,263,143	16,600,861	7.61
	176,892	991,248	17.85
	2,007,545	9,999,125	20.08

TABLE 4

The MDU Proposed Interclass Revenue Levels*

		Existing Revenues $10³)	Proposed Revenues ($10³)	Percent Change (%)
Rate 60	Residential			
	Firm	28,347	35,040	23.6
Rate 70	Commercial			
	Firm	20,630	23,031	11.6
	Interruptible	1,602	1,669	4.2
Rate 85	Industrial			
	Interruptible	2,448	2,540	3.8
Rate 90	Industrial			
	Fuel Oil	15,821	14,485	(8.4)

* Discovery Document No. PSC-1. Does not include unreflected gas cost portion of tracking adjustment. As such, revenues shown fall short of authorized level by Approximately $8 million.

TABLE 5

The MDU Proposed Unit Costs
From Fully Distributed Accounting Study*

		Customer Charge ($/meter-month)	Commodity** ($/Mcf)
Rate 60	Residential		
	Firm	11.27	4.33
Rate 70	Commercial		
	Firm	29.57	4.32
	Interruptible	27.72	4.01
Rate 85	Industrial		
	Interruptible***	53.32	4.06
Rate 90	Industrial		
	Fuel Oil	361.85	3.94

* Derived from Discovery Document No. SI-5, Part A, p. 1.
** At 14.73 PSIA.

145. Mr. Fox argues that should MDU re-enter the market in pursuit of additional gas supplies, the maximum the Company would pay is the NGPA Section 102 (new gas) ceiling price -- $3.448 per Mcf (Exh. Q, p. 7). The existing rate structure (see Table 2) features tail block commodity charges substantially in excess of the Section 102 ceiling price. As such, Mr. Fox testifies that the existing structure in its rationing function "1) discourages efficiency in the use of the Company's and the customer's capital, 2) discourages efficient use of natural gas, and 3) encourages inefficiency in capital investment for conservation measures" (p. 10).

146. To now equate a tail block price with the marginal commodity cost would require either a $89.45 per meter per year lump sum charge ($7.45 per month), an initial block price of $9.61 per MCF, or some combination thereof (p. 8).

147. Mr. Fox argues that the proper rate schedule would feature customer charges and a flat commodity charge for all levels of consumption. For purposes of moderating the resulting- rate impact, Mr. Fox proposes a transition to flat rates for residential customers by reducing the existing

25 percent discount differential to 12.5 percent. For commercial customers, Mr. Fox proposes that the discount be eliminated entirely. Rather than customer charges, Mr. Fox proposes minimum bills of $5 and $10 for residential and commercial customers respectively (pp. 12-15).

148. On October 5, 1983 MDU proposed a residual-fuel-oil-based industrial gas rate -- Rate 90. The filing was combined into this Docket and on January 5, 1984, was approved on a temporary basis in Order No. 5020a.

149. Rate 90 features a gas rate for industrial customers with dual-fuel capabilities that fluctuates with the market price of residual fuel oil. The price of gas under Rate 90 would not fall below the current average cost of gas plus 10 percent and would not rise above the otherwise applicable industrial gas rate -- Rate 85.

150. MDU argues that Rate 90 is essential to keep industrial customers with dual fuel boilers from switching to oil. The Rate 90 price floor would assure that the rate exceeds the current cost of gas, thus contributing to the coverage of nongas costs and preventing any subsidy. (Mr Fox October 3, 1983 letter of application, pp. 1-3.)

151. Table 6 provides the MDU rate proposal. The prices shown generate the existing revenue level and as such can be directly compared with the- existing rates provided in Table 2.

TABLE 6

The MDU Rate Proposal*

		Customer *** ($/meter-month)	Commodity** Winter-first 15 Mcf/all other ($/Mcf)
Rate 60	Residential		
	Firm	0	$5.355/$6.120
Rate 70	Commercial		
	Firm	0	5.709
	Interruptible	0	5.133
Rate 85	Industrial		
	Interruptible***	0	5.117
Rate 90	Industrial		
	Fuel Oil	0	4.000

* Derived from Discovery Document No. PSC-1, Revised Exhibit Q, CWF-2 p. 1.
** At 14.73 PSIA.
*** Minimum bills of $5 and $10 would apply.

152. The MCC Proposal. MCC witness Mr. Drzemeicki (Exh. MCC-3) also submitted a fully distributed accounting study. The MCC study is similar to the MDU study in both method and results. One area of contention is the treatment of distribution plant and related expenses (pp. 29-32). Mr. Drzemeicki also argues that the accounting studies serve only as a surrogate for what should be a time-differentiated marginal cost of service study (TR. pp. 464-467).

153. Table 7 provides the results of Mr. Drzemeicki's fully distributed accounting study which can be directly compared with the MDU study as presented in Table 3. Mr. Drzemeicki concludes that:

> (I)t is clear that the residential class is presently providing a return to MDU's Montana operations below jurisdictional average. In addition, the remaining Montana rate classes on the MDU system are presently providing returns in excess of the jurisdictional average. Given these facts, it would not be inappropriate to assign to the residential class a larger proportionate share of the authorized revenue increase in this proceeding for the purpose of designing class rates. (Exh. MCC-3, p. 34)

154. Whereas MDU proposes interclass prices which reflect its fully distributed accounting study, the MCC recommends only that any revenue increase subsequent to interim increases be reflected exclusively in increased residential rates[1].

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[1] MCC witness Mr. Clark proposed an additional $800,000 in authorized annual revenues beyond the interim level. The final authorized revenue increase is $870,512.

TABLE 7

The MCC Fully Distributed Accounting Study Results*

	Income ($)	Rate Base ($)	Rate of Return (%)
Residential	-1,031,818	25,832,224	-3.99
Commercial-Firm	1,177,835	17,270,427	6.82
Commercial-Interruptible	167,830	1,062,406	15.80
Industrial	1,981,251	10,205,437	19.41

* From Exhibit MCC-3, JD-1, p. 1.

155. Mr. Drzemeicki concurs with the MDU minimum bill and the reduced energy rate differential for residential customers, but argues that the commercial differential should be reduced, not eliminated (pp. 39-43).

156. Mr. Drzemeicki also recommends rejecting Rate 90. The lack of a complete time-differentiated marginal cost of service study leaves uncertain the changes in costs associated with changes in industrial sales. As an alternative, Mr. Drzemeicki recommends freezing the industrial Rate 85 at its current level pending a more detailed analysis of avoidable costs (pp. 45-47).

157. Table 8 provides the MCC proposal. The proposed rates, as shown, generate the existing level of authorized revenues and, as such, can be directly compared with Table 2 (existing rates) and Table 6 (MDU's proposal).

158. Vis-a-vis the existing rates (Table 2), Table 8 reflects the effect of eliminating the Rate 90 rate and reducing the firm differential to 12.5 percent. Increasing exclusively the residential rate to reflect a final revenue increase of $870,512 would lead to residential rates of $4.967 and $5.677 for winter-first 15 Mcf and all other Mcf, respectively.

TABLE 8

The MCC Rate Proposal*

		Customer ** ($/meter-month)	Commodity*** Winter-first 15 Mcf/all other ($/Mcf)
Rate 60	Residential		
	Firm	0	$4.849/$5.542
Rate 70	Commercial		
	Firm	0	$4,849/$5.542
	Interruptible	0	5.311
Rate 85	Industrial		
	Interruptible***	0	5.265
Rate 90	Industrial		
	Fuel Oil	0	5.265

* Derived from Statement H assuming existing interclass revenue levels with Rate 90 equal to Rate 85. Final increased revenues result in residential rates of 4.967/5.677 $/Mcf.

** Minimum bills of $5 and $10 would apply.

*** At 14.73 PSIA.

159. Summary of the proposals. In summary, MDU and the MCC concur in the following:

i. the use of a fully allocated accounting study to arrive at interclass revenue levels,

ii. reducing the residential commodity rate differential to 12. 5 percent, and

iii. adopting minimum bills of $5 and $10 for residential and commercia customers, respectively.

160. The positions of the two parties differ in the following areas:

i. the treatment of distribution plant and expenses in the fully allocated studies,

ii. the commercial commodity rate differential (0% vs. 12.5%),

iii. the fate of Rate 90, and

iv. the amount by which interclass revenue levels should be changed to reflect the fully allocated accounting studies.

161. Cost of service. The record in this Docket does not feature a time-differentiated marginal cost of service study. Mr. Drzemeicki testified that:

> . . . for purposes of designing rates, the most appropriate basis for that would be to determine class revenue requirements on the basis of marginal costs of service; that that is consistent with my position that I've taken in the electric filing of Montana-Dakota Utilities.
>
> The reasons for not relying on a Marginal Cost-of Service Study in this proceeding was based to a large; extent on the lack of information that the Company possesses at the present time with respect to its marginal costs of service on its system. And, as a result, I've used the Embedded Cost-of-Service Study here to provide some indication of the contribution that's being made by various rate classes on the MDU gas system as a means of examining their relative returns that the Company's earning from gas service at the present time. (TR. pp. 464-465)

162. In this Docket the Commission chooses to use the fully allocated accounting studies in that they may serve as an adequate proxy for current costs, and as such represent the best information available.

163. The proper treatment of lower level distribution related costs in a cost/price formula is much disputed. In this case, MDU proposes a classification as follows:

Customer
40%

Distribution Mains
Plant/Expenses
100%

Energy
30%

Commodity
60%

Demand
30%

(Symbols missing from text -- see hard copy.)

164. Mr. Drzimeicki argues that this approach overestimates customer-related costs -- even a minimum distribution system is configured based on consumption patterns (p. 31). Mr. Drzemeicki argues that the proper approach would treat distribution in the following fashion:

Customer
0%

Distribution Mains
Plant/Expenses
100%

Energy
50%

Commodity
100%

Demand
50%

(Symbols missing from text -- see hard copy.)

165. The record in this Docket does not provide an elaborate debate of the distribution formula. Clearly some distribution investment must be incurred to provide commodity-access, regardless of consumption pattern. It is not evident whether MDU's minimum distribution calculation overestimates this access-related cost of service.

166. The MCC fully allocated accounting study does not provide unit costs. Table 5 lists the MDU unit costs. Mr. Drzemeicki's treatment of distribution plant and expenses would somewhat lower the customer-related unit costs and increase the commodity-related costs.

167. Table 5 indicates unit commodity costs-varying from $3.94 for Rate 90 to $4.33 per Mcf for Rate 60. To the extent these figures are dominated by current gas costs, they will tend to approximate the marginal cost of gas service. The current load/resource balance indicates that the fully allocated accounting studies probably overestimate marginal transmission and distribution cost, even in the long-run.

168. Mr. Fox argues that the NGPA Section 102 ceiling price is the maximum MDU would pay for additional gas supplies. The 102 ceiling price is currently (April, 1984) $3.656 per Mcf[1].

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[1] The ceiling price escalates per FERC formula -- currently at an annual rate of 7.6%. Deregulation at January 1, 1985 will allow market forces to determine the

169. In response, Mr. Drzemeicki testified that:

A. The issue here behind defining marginal costs and the relevance of those marginal costs which would be for ratemaking purposes has to be the costs that the Company avoids. If it were to see a reduction in demands on their system, what types of cost savings would they realize? And, given the discussion that I've heard this morning, I don't know that the cost of 102 gas would accurately reflect the cost savings that the Company would realize if it were to reduce its demands, reduce its purchases of natural gas.

If 102 gas were at the margin, okay? If that were - the natural gas associated with -- If that were the source of gas that had the -- that was the most expensive for the Company at present, then the answer is yes, I would agree that it accurately defines the marginal commodity cost of gas. But apparently that is not the case on this system. So, I would -- I would state that I don't know that I would agree that the marginal cost -- commodity cost for MDU as 102 can be accurately measured by 102 gas.

Q. Do you have an opinion as to whether it would be higher or lower?

A. Given what I've seen with respect to MDU's gas purchases by source and type, MDU does purchase natural gas from producers at costs higher than the section 102 gas that Mr. Fox is using as his proxy for marginal commodity cost. But we don't know whether or not those higher-cost sources of gas at the margin for all relevant time periods during the year would be the marginal commodity cost of gas, because there are purchase restrictions or purchase requirements that MDU has for its various sources of natural gas that it must take and that it is locked into those takes. (TR. pp. 471-472)

170. As a result of decreasing loads, MDU is reducing contractual gas supplies on a largely pro rata basis -- from high cost (e.g. Section 107) and low cost (e.g. Section 109) supplies, equally. The average cost is $3.37 per Mcf (Late Filed Exh . 13).

171. If MDU was able to avoid gas costs by backing off contractual supplies in an economic dispatch fashion (as opposed to pro rata), then avoided gas costs would include costs as high as $7.595 per Mcf (Docket No. 83.10.74, Exh. A, p. 5). MDU has reduced its contractual supply

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new gas price levels.

of 116.8 BCF to 66.2 BCF, and recently further reduced its take to 46.0 Bcf. A demand of 66.2 BCF would face Section 102 gas at the margin. The average cost of Section 102 supplies is $4.238 per Mcf (Late Filed Exh. 2). A demand level of 46.0 BCF would require only Section 103 supplies at the margin. The average cost of 103 contractual supplies is $3.34 per Mcf (Late Filed Exh. 2).

172. Another indicator of marginal gas supply costs is the Canadian border price. When Order No. 4635 was issued in April, 1980, the border price was $4.47 per Mcf (Order No. 4635, p. 36), but has since been reduced to $4.27 per Mcf ($4.40 per MMBTU) with incremental prices at $3.30 per Mcf[1].

173. One final indicator of the marginal gas supply cost, and possibly the longest-run indicator, is the price of oil. To the extent that oil and-gas are close substitutes -- as the current industrial fuel-switching indicates -market forces will tend to equate the supply costs. The current oil price as indicated by the Energy Information Administration's Alternative Fuel Price Ceiling is $4.02 per MMBTU (Federal Register, January 23, 1984) . The current basis for Rate 90 is $4.00 per Mcf.

174. The cost information is summarized in Table 9. Only the fully allocated study includes nongas costs. it should also be pointed out, however, that the fully allocated study falls some $8 million short of reflecting the existing authorized revenue requirement.

TABLE 9

SUMMARY OF INDICATORS OF MARGINAL GAS SUPPLY COST*
($/MCF)

Fully Allocated Accounting Study	$3.94-$4.03
Section 102	$3.66
Pro Rata Supply Reduction	$3.37
Economic Dispatch Supply Reduction at 46.0 BCF	$3.34
Canadian Border Price	$3.30

[1] The Volume Related Incremental Pricing (VRIP) program establishes a base equal to actual volumes purchased during the November, 1981 through October, 1982 year. Volumes purchased in excess of the base on a monthly or annual basis are prices at $3.30.

Alternative Price Ceiling (oil)	$4.00

* At 14.73 PSIA.

175. Minimum bills and commodity rate differentials. As previously set forth, the basis for the existing rate structure was the relationship between authorized revenue requirement and, predominately, the marginal cost of gas. It is evident from Table 2 (existing rates) and Table 9 (indicators of the cost of gas) that gas prices approximating gas costs does not require inverted rates. Retail natural gas prices at current levels now exceed marginal gas costs and the inverted rate structure is no longer required to give consumers the proper price signal for increased consumption. It now appears that even flat rates, without customer charges, will be in excess of marginal gas costs.

176. The Commission finds that the proposal to reduce the residential differential to 12.5 percent is an appropriate response to the cost/price information provided. The Commission also finds that it is appropriate to eliminate the differential for commercial customers, entirely. The monthly bill comparison provided by Mr. Fox does not indicate a substantial impact requiring moderation (Exh. Q, CWF-3, p. 6) and there is no evidence that usage levels are related to commercial ability to pay. At this time there is no basis for an inverted commercial commodity rate.

177. During the public hearings, representatives from Action for Eastern Montana and several individuals expressed great concern about MDU and MCC's agreement to reduce the winter residential differential to 12.5 percent. The Commission shares the concern over high winter heat bills, but recognizes that the lack of wood and other alternative energy sources in the MDU service area means most customers exceed the 15 Mcf consumption level. Reducing the differential means that the cost of higher levels of consumption necessary during cold months will be lower than with more steeply inverted rates.

178. Both MDU and the MCC propose minimum bills for residential and commercial customers of $5 and $10, respectively. The proposal is reasonable and approved.

179. Interclass revenue level and Rate 90. These two issues are related. The necessity of a Rate 90 (fuel-oil rate) depends on how interclass revenue levels are established; and Rate 90, to the extent it differs from Rate 85 (otherwise applicable industrial rate), causes direct changes in interclass revenue levels through the gas cost tracking mechanism.

180. MDU proposes interclass revenue levels reflecting the fully allocated accounting studies and approval of Rate 90. The MCC proposes only that any revenue increase beyond the interim level, approximately $870,000, be reflected exclusively in increased residential rates . Mr. Drzemeicki recommends that Rate 90 be denied -- industrial customers would be served on the otherwise applicable Rate 85.

181. Mr. Drzemeicki's proposed Rate 85 is $5.265 per Mcf (Table 8). This can be compared with the cost indicators provided in Table 9. Eighty-seven percent of MDU's industrial sales (23% of total sales) are to dual-fuel customers. Should these loads (3.6 BCF) choose to switch to $4.00 per Mcf oil, MDU would avoid, at least, gas costs of $12.2 million (at $3.37 per Mcf) with foregone revenues of $19.7 million (at $5.265 per Mcf) -- a net loss of $7.5 million. At $4.00 per Mcf, MDU would lose $2.3 million in net revenues.

182. It appears that Mr. Drzemeicki's proposal must be rejected -- either Rate 85 must be reduced from its interim level or Rate 90 must be extended on at least a temporary basis. Reducing Rate 85 to a level resulting from a strict application of the MDU fully allocated accounting study would result in a price of $4.930 per Mcf[1]. Even here there is a question as to whether the long-run marginal costs associated with serving Rate 90 customers (or savings resulting from not serving these loads) exceeds the rate level.

183. In this Docket the Commission chooses to follow Mr. Drzemeicki's recommendation to reflect only the additional revenue increment ($870,512) exclusively in increased residential rates. This action represents a significant shift of prices toward the results of the fully allocated accounted studies while recognizing that these studies are only proxies for true economic cost of service.

184. The Commission also finds that it is necessary to extend the applicability of Rate 90 to dual-fuel industrial customers. This will assure that these loads and their resulting contribution to nongas costs are maintained while the issue is addressed more fully.

Rate 90

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[1] Derived by adjusting the MDU fully allocated accounting results by a uniform percentage reflecting the final authorized revenue level.

185. In affirming the current appropriateness of Rate 90, the Commission feels compelled to draw attention to the important issue of gas cost incentives. In that the dual fuel customers represent the most price-elastic sales, the incentives to minimize gas costs are somewhat diminished by Rate 90. Of particular concern is the manner in which relatively low cost Company production is priced for purposes of gas cost accounting. If MDU records Company produced gas at NGPA composite costs, then this will be interpreted as an indicator that Rate 90 is not necessary.

186. MDU is directed to prepare an analysis of time-differentiated marginal cost of gas service. The analysis must be of sufficient detail to allow a permanent and long-run assessment as to the desirability of maintaining Rate 90 customers on a fuel-oil equivalent basis. Rate 90 is authorized for an 18 month period or until subsequent action is taken on a permanent disposition of the issue, whichever occurs first.

187. Table 10 provides the final MDU natural gas rates.

TABLE 10

The Final MDU Natural Gas Rates*
($/Mcf)

		Customer ** ($/meter-month)	Commodity *** Winter-first 15 Mcf/all other ($/Mcf)
Rate 60	Residential		
	Firm	$0	$5.209/$5.953
Rate 70	Commercial		
	Firm	$0	5.865
	Interruptible	$0	5.684
Rate 85	Industrial		
	Interruptible	$0	5.638
Rate 90	Industrial		
	Fuel Oil	$0	4.000

* Illustrative only, final rates will vary somewhat do to minimum bill revenues and tracking calculation.

** Minimum bills of $5 and $10 would apply.

*** At 14.73 PSIA.

188. Limited Gas Service Rate 97. On September 26, 1983, MDU proposed a distribution service priced at 5¢ per Mcf based on the MDU fully allocated accounting study submitted in this Docket (Mr. Fox September 26, 1983 letter of application). Rate 97 provides distribution service to large industrial customers who purchase natural gas from alternative sources. On October 17, 1983, Rate 97 was approved for a six-month period and was extended for an additional two months on April 14, 1984.

189. The Rate 97 distribution service amounts to a wheeling provision whereby large industrial customers may be served by alternative, and presumably more efficient, producers. A similar wheeling provision is the cornerstone to the Public Utility Regulatory Policies Act, Section 201, where electric utilities are required to deal with the presumably more efficient generation of alternative producers.

190. The Commission finds that Rate 97 is currently appropriate, but should be subject to continuing scrutiny.

CONCLUSIONS OF LAW

1. The Applicant, Montana-Dakota Utilities Company, furnishes natural gas service to consumers in Montana, and is a "public utility" under the regulatory jurisdiction of the Montana Public Service Commission. §69-3-101, MCA.

2. The Commission properly exercises jurisdiction over the Applicant's rates and operations. §69-3-102, MCA, and Title 69, Chapter 3, Part 3, MCA.

3. The Commission has provided adequate public notice of all proceedings and opportunity to be heard to all interested parties in this Docket. Title 2, Chapter 4, MCA.

4. The rate level and rate structure approved herein are just, reasonable, and not unjustly discriminatory. §69-3-330, MCA.

DOCKET NO. 83.8.58, ORDER NO. 5020b

ORDER

1. The Montana-Dakota Utilities Company shall file rate schedules which reflect increased annual revenues of $5,701,374 in lieu of, rather than in addition to, interim rates. The total annual gas revenues of Montana-Dakota Utilities Company will be approximately $75,555,358.

2. All motions and objections not ruled upon are denied.

3. Rate schedules filed shall comport with all Commission determinations set forth in this Order.

4. Nothing herein shall be deemed a disposition of issues contained in Docket No. 82.6.40, Phase II.

5. This Order is effective for services rendered on and after May 15, 1984.

DONE AND DATED this 15th day of May, 1984, by a vote of 3-0.

BY ORDER OF THE MONTANA PUBLIC SERVICE COMMISSION.

THOMAS J. SCHNEIDER, Chairman

HOWARD L. ELLIS, Commissioner

DANNY OBERG, Commissioner

ATTEST:

Madeline L. Cottrill
Secretary

(SEAL)

NOTE: Any interested party may request the Commission to reconsider this decision. A motion to reconsider must be filed within ten days. See 38.2.4806, ARM.